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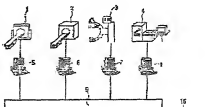
(54) MEDICAL SYSTEM ARCHITECTURE WITH COMPONENT NAVIGATION

(57)Abstract:
PROBLEM TO BE SOLVED: To facilitate data exchange between with the outside by integrating connection to be one process and providing an image graphic, so as to improve flexibility for a medium system architecture with an image constituting device.
SOLUTION: A CT unit for computer tomography 1, an MR unit for magnetic resonance 2, a unit for digital subtraction angiography 3 and an X-ray unit 4 for digital radiography 4 are respectively controlled by the work stations 5 to 8 of computers to process images to be stored and to store in a central image memory 10 through a communication network 9 to transfer to the work stations 5 to 8. In addition an image is transferred to other workstations 11 and 12 and an image and data are exchanged between with various network through a network interface 15 on a worldwide scale.



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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the medical system architecture equipped with component navigation, this medical system architecture has the mode for each image detection, the equipment for image processings, and equipment for picture transmissions, in that case, the equipment for image processings has the digital image system equipped with the calculating machine, and this calculating machine operates according to the data switching system between the various application programs equipped with each graphic control member.

PRIOR ART

[Description of the Prior Art] Each medical system (for example, indicated by a publication "Bildgebende Systeme fuer die medizinische Diagnostik", Heinz Morneburg [an editor], Erlangen, Publicis MCD-Verlag, 3.Auflage 1995, and 680-697 pages) is still more complicated, and becomes large by the ratio with the same said of extent of an escape of a medical system. However, thereby very flexible architecture is needed.

[0003] Each well-known architecture is conventionally constituted without dispersive software and each software module substantially.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The technical problem of this invention is to constitute the software module (object) which has the property which carries out self-hold as much as possible. Furthermore, it is necessary to make transparent each connection of each inter module to the location of this module (object), consequently the whole of each connection is unified by one process, or it can be distributed through a network.

EFFECT OF THE INVENTION

[Effect of the Invention] The advantage of the proposal of this invention is in the point of the easy operability for the data exchanges of the flexibility and the mode of further others.

MEANS

[Means for Solving the Problem] In the medical system architecture which this technical problem equipped with the mode for image detection, the equipment for said image processings, and the equipment for said picture transmissions according to this invention the equipment for said image processings It has the digital image system equipped with the calculating machine. Said calculating machine It operates according to the method for the data exchanges between the various application programs equipped with each graphic control member. British Standard and another medical information for said picture transmissions in the case of this actuation between each computer In order to make possible digital communication between each mode of various manufacturers, it is supplied as each software component and said manufacturer can solve by attaching the WWW escape type for the images of said British Standard in a WWW browser.

[0006]

[Embodiment of the Invention] On the other hand, on each component and another side by which self-hold is carried out, it is obtained by the DICOM object model using the new WWW escape type in the specific new viewer of British Standard.

[0007] It is advantageous if medical British Standard is made into DICOM criteria.

[0008] According to this invention, a WWW escape can be made into an Internet mail extension (MIME), and a WWW escape is equivalent to a DICOM image, DICOM video, or the viewer of DICOM in that case.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] System architecture of a medical computer network

[Description of Notations]

1 CT Unit
2 MR Unit
3 DSA Unit
4 X-ray Unit
5-8 Workstation
9 Pictorial Communication Network
10 Central Image Memory
11 12 Inspection console
13 14 Local image memory
15 Network Interface

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the medical system architecture equipped with component navigation, this medical system architecture has the mode for each image detection, the equipment for image processings, and equipment for picture transmissions, in that case, the equipment for image processings has the digital image system equipped with the calculating machine, and this calculating machine operates according to the data switching system between the various application programs equipped with each graphic control member.

[0002]

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[0005]

[Means for Solving the Problem] In the medical system architecture which this technical problem equipped with the mode for image detection, the equipment for said image processings, and the equipment for said picture transmissions according to this invention the equipment for said image processings It has the digital image system equipped with the calculating machine. Said calculating machine It operates according to the method for the data exchanges between the various application programs equipped with each graphic control member. British Standard and another medical information for said picture transmissions in the case of this actuation between each computer In order to make possible digital communication between each mode of various manufacturers, it is supplied as each software component and said manufacturer can solve by attaching the WWW escape type for the images of said British Standard in a WWW browser.

[0006]

[Embodiment of the Invention] On the other hand, on each component and another side by which self-hold is carried out, it is obtained by the DICOM object model using the new WWW escape type in the specific new viewer of British Standard.

[0007] It is advantageous if medical British Standard is made into DICOM criteria.

[0008] According to this invention, a WWW escape can be made into an Internet mail extension (MIME), and a WWW escape is equivalent to a DICOM image, DICOM video, or the viewer of DICOM in that case.

[0009]

[Example] Hereafter, this invention is explained to a detail using the example of illustraion.

[0010] The system architecture of a medical computer network is shown in drawing. Because of detection of a medical image, they are modes 1-4 (as an image formation system, it has the CT unit 1 for computer tomographies, the MR unit 2 for nuclear magnetic resonance, the DSA unit 3 for digital subtraction ANGIOGURAFI, and the X-ray unit 4 for digital radiography 4.). Workstations 5-8 are connectable, using this workstation, each modes 1-4 can be controlled in each of these modes 1-4, and the detected medical image can be processed and memorized in them. The kind of workstation is a very quick small computer based on one or more high speed processors.

[0011] Each workstations 5-8 are connected with the formed image and the communicative pictorial communication network 9 for distribution. The image which followed, for example, was formed in modes 1-4 can be transmitted to storage or other workstations 5-8 in the central image memory 10.

[0012] Another workstation can be connected to the image communication network 9 as inspection consoles 11 and 12, and this inspection console can be connected to the local image memory 13 and 14, for example, a jukebox, in it. By the inspection consoles 11 and 12, it can call for inspection of each image which was detected and was memorized in the image memory 10 later, and can memorize in the local image memory 13 and 14, and the tester who is working by the inspection console 11 or 12 can use each image directly from this local image memory.

[0013] The data which the network interface 15 could be connected, and the internal image communication network 9 was connected with the global-data network through this interface, consequently were standardized are exchangeable for the image communication network 9 on a scale of worldwide using various networks.

[0014] This image and data exchange through the pictorial communication network 9 are performed according to British Standard for digital-communication transmission between each diagnostic equipment [of the medical information on DICOM specification which has spread widely, an image, and others] of various manufacturers, and each therapeutic device in a medical system in that case.

[0015] According to this invention, use of the special viewer of a new WWW escape MIME(Multipurpose Internet Mail Extension) DICOM image, DICOM video, or each DICOM object is supported.

[0016]

[Effect of the Invention] The advantage of the proposal of this invention is in the point of the easy operability for the data exchanges of the flexibility and the mode of further others.

EXAMPLE

[Example] Hereafter, this invention is explained to a detail using the example of illustration.
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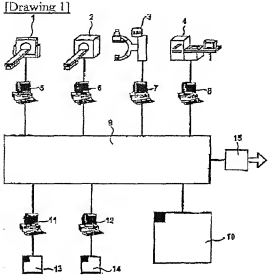
DRAWINGS

[Drawing 1]



CLAIMS

[Claim(s)]

[Claim 1] In the medical system architecture equipped with the mode for image detection (1-4), the equipment for said image processings (11 5-8, 12), and the equipment for said picture transmissions (9) The equipment for said image processings (11 5-8, 12) It has the digital image system equipped with the calculating machine. Said calculating machine It operates according to the method for the data exchanges between the various application programs equipped with each graphic control member. British Standard for said picture transmissions and the medical information on other in the case of this actuation between each computer Medical system architecture which is supplied as each software component and characterized by assigning said manufacturer the WWW escape type for the images of said British Standard in a WWW browser in order to make possible digital communication between each mode of various manufacturers.

[Claim 2] British Standard is medical system architecture according to claim 1 which is DICOM specification.

[Claim 3] A WWW escape is medical system architecture according to claim 1 or 2 which is a multipurpose Internet mail extension (MIME).

[Claim 4] A WWW escape is the medical system architecture of the any 1 publication to claims 1-3 which are the objects for DICOM images.

[Claim 5] A WWW escape is the medical system architecture of the any 1 publication to claims 1-3 which are the objects for DICOM videos.

[Claim 6] A WWW escape is the medical system architecture of the any 1 publication to claims 1-3 which are the objects for the viewers of each DICOM object.